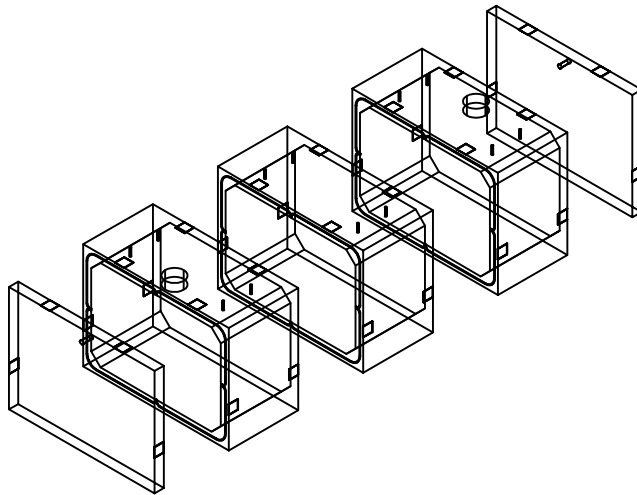




**KISTNER CONCRETE PRODUCTS, INC.**

MANUFACTURERS OF:

# **PRECAST KON-STRUCTURE™ KOMPONENT TANKS**



## **KON-STRUCTURE™ THE WATERTIGHT PRECAST TANK SYSTEM**

### **KON-SEAL™ /KON-LOK™ WATERTIGHT TANK JOINT SYSTEM**

THE KON-STRUCTURE™ SYSTEM IS A PRECAST CONCRETE LARGE VOLUME WATERTIGHT LIQUID STORAGE TANK SYSTEM.

THE KON-STRUCTURE™ SYSTEM WAS DEVELOPED TO FULFILL THE GROWING NEED FOR LARGE VOLUME UNDERGROUND WATERTIGHT STORAGE TANKS.

THE DESIGN INVOLVES THE USE OF HIGH QUALITY PRECAST TANK SECTIONS WITH THE INCORPORATION OF THE KON-SEAL™ WATERTIGHT JOINT SYSTEM AND THE KON-LOK™ CONNECTION SYSTEM.

DESIGNERS AND ENGINEERS NOW HAVE THE FLEXIBILITY TO SPECIFY A HIGH QUALITY FACTORY CAST PRECAST SEGMENTAL WATERTIGHT TANK WITH THE KON-SEAL™ WATERTIGHT JOINT SYSTEM.

FORMERLY, THESE LARGE VOLUME TANKS WERE ONLY AVAILABLE AS CAST-IN-PLACE (C.I.P.) DUE TO SIZE. THE KON-STRUCTURE™ SYSTEM ALLOWS SIGNIFICANT FREEDOM OF DESIGN.

APPLICATIONS: SEPTIC TANKS, HOLDING TANKS AND TREATMENT TANKS, GLYCOL STORAGE, ETC.

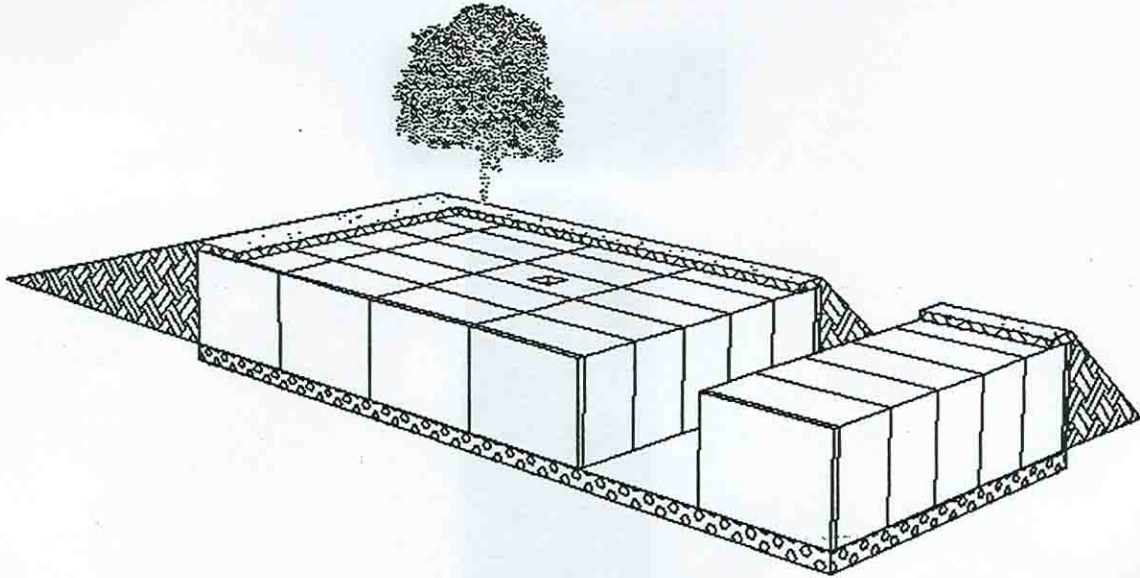
KISTNER IS AVAILABLE TO HELP YOU DESIGN YOUR NEXT LARGE VOLUME WATERTIGHT TANK SYSTEM. CALL FOR MORE INFORMATION.

STANDARD TANK SIZES: 12' SPAN X 6' RISE I.D.  
H-20 LOADING  
448 GALLON L.F. @ 5' WATER DEPTH

BC-KONTNK-1

## PRE-CAST CONCRETE "KON-TANK"<sup>™</sup> CULVERT SYSTEM

### PROVEN LOW COST



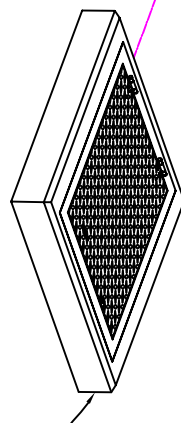
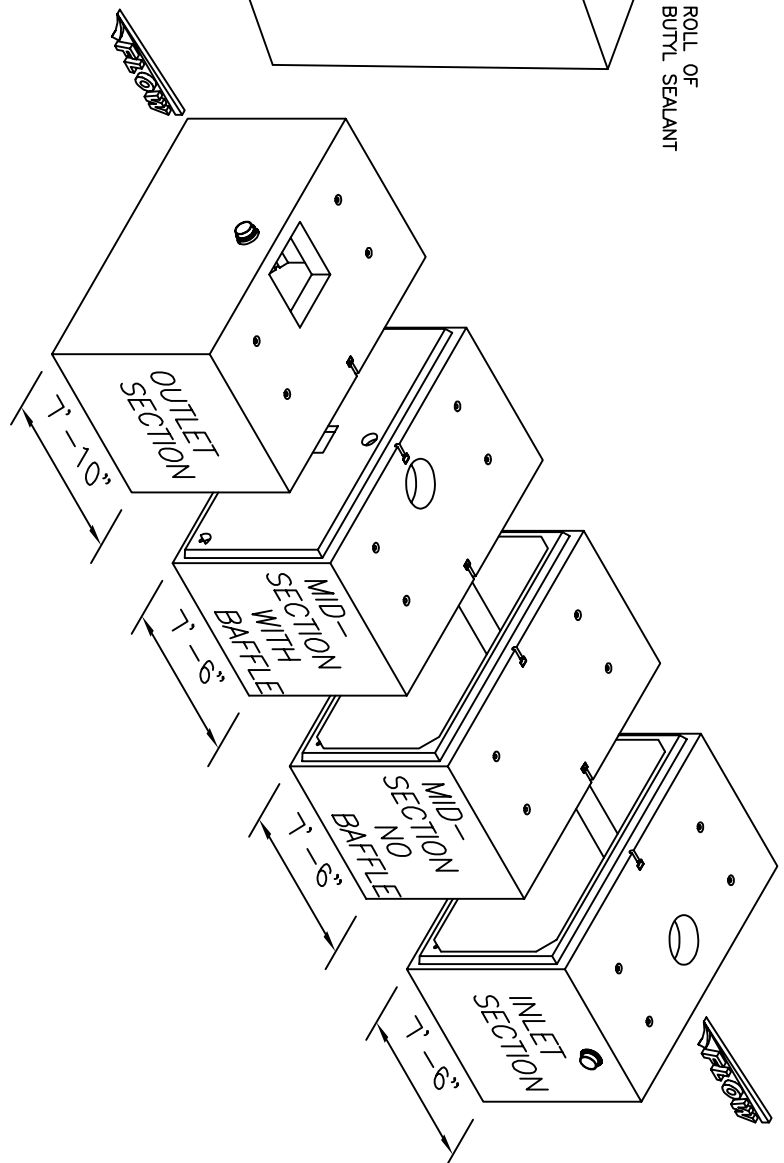
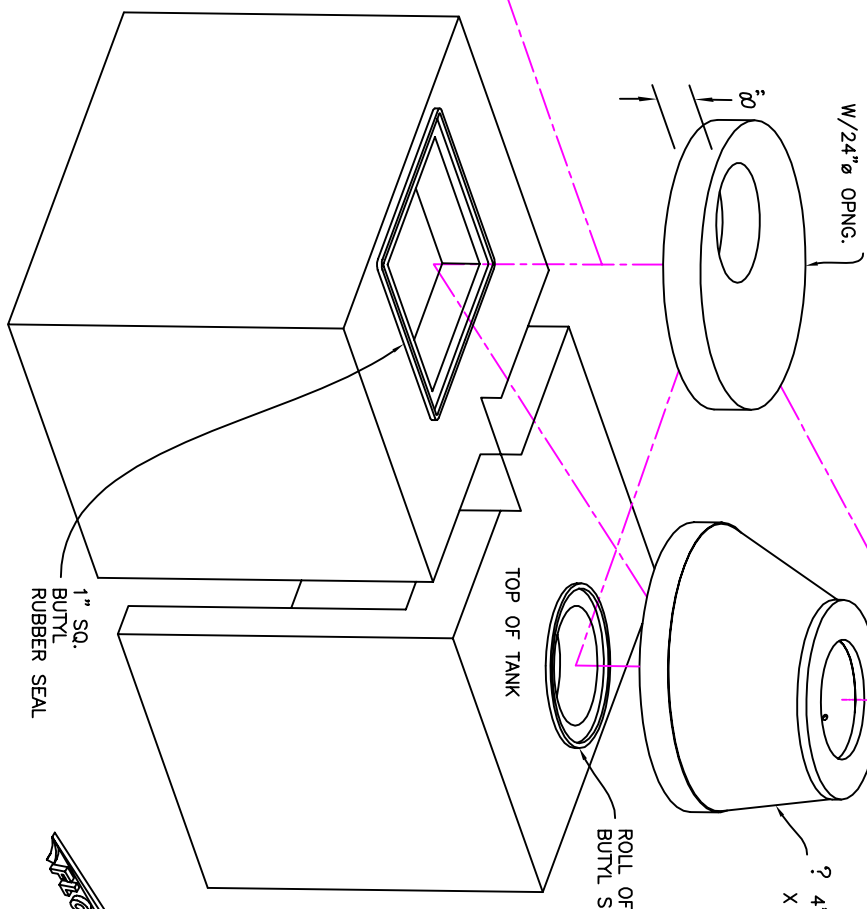
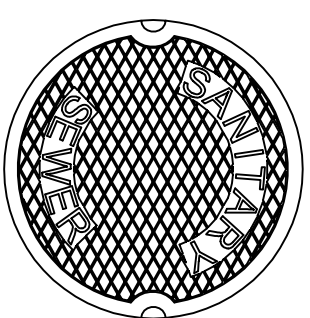
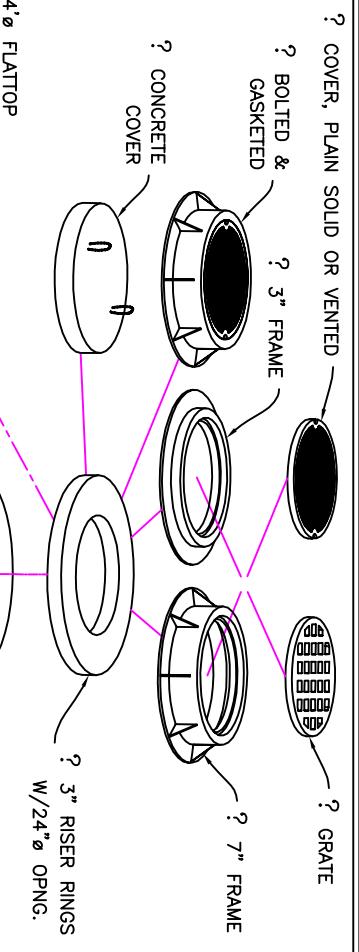
Pre-engineered and designed modular system shortens completion time and reduces construction traffic.

- Kon-Seal<sup>™</sup> watertight sealing system with gasket
- Kon-Lok<sup>™</sup> assembly
- H-20 truck traffic design loading
- 100,000 - 1 million gallon capacity

Environment XXI offers design-build services, from complete engineering to final construction: Our unique precast tanks are designed for optimum economy and installation efficiency using the Bolt-Lock<sup>™</sup> post-tension connection system & Kon-Seal<sup>™</sup> watertight sealing system. "Kon-Tank" is the economic solution to your large volume liquid storage systems. Our computer-aided design system provides complete, individual specialized engineering plans for each tank constructed. From start to finish, Environment XXI, can provide you with design, engineering, complete plans and specifications, construction and financing through low interest capitalized lease programming.

#### **Application:**

- Bio-solids storage systems
- Storm water retention system
- Water storage tanks
- Agricultural liquid storage applications
- Glycol storage



54" SQ. CONC. RISER W/  
36" SQ. ALUM. SYRACUSE  
CASTING #EC-7  
? 6" TK. NON-TRAFFIC  
? 8" TK. TRAFFIC

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PROPRIETARY INFORMATION - ALL RIGHTS OF KISTNER CONCRETE PRODUCTS, INC.

REVISIONS

A	7-16-02
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PROJECT: KON-STRUCTURE™ EXPLODED ISO VIEW

LOCATION:

OWNER:

ENGINEER:

CONTRACTOR: KISTNER CONCRETE PRODUCTS, INC.

MANUFACTURER: KISTNER CONCRETE PRODUCTS, INC.

PRODUCT DESIGNATION: KON-STRUCTURE™ TANK SYSTEM

SCALE: N/A DRAWN BY: DAR DATE: 6-20-02 DWG. NO: BC-KTEL-NEW

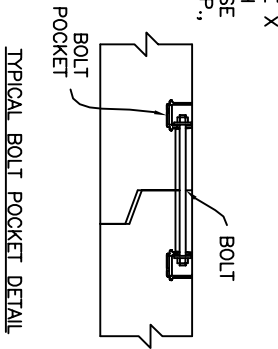
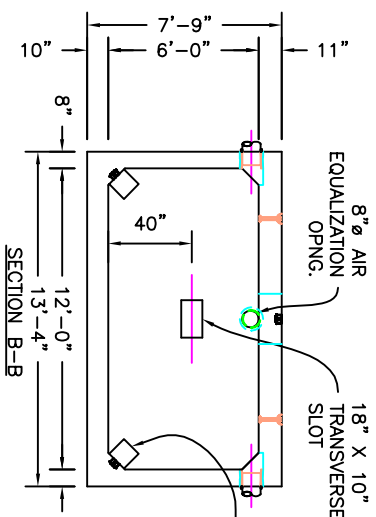
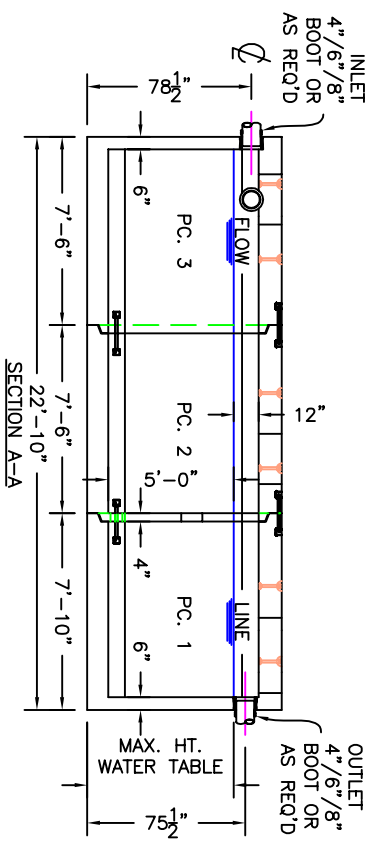
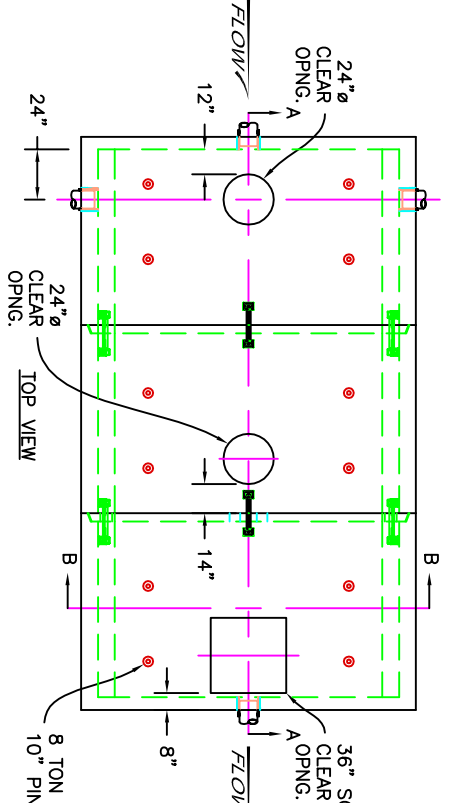
DESIGNED BY: MJK CHECK 1: DAR CHECK 2:



KISTNER CONCRETE PRODUCTS INC.  
8713 READ ROAD  
E. PEMBORKE, N.Y.  
14056  
(716) 894-2267

# FILL OVER TANK

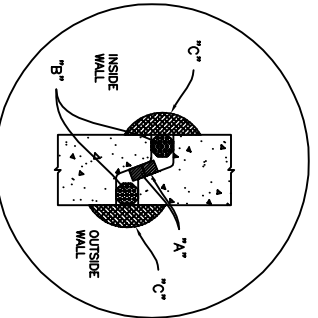
**WARNING**  
WATER TABLE NO HIGHER THAN INVERT OF OUTLET PIPE.



**SPECIFICATIONS:**  
 CONCRETE: 5000 P.S.I. @ 28 DAYS  
 ENRAINED AIR: 5% - 9%  
 STEEL: A.S.T.M. A496-A615  
 GRADE 60-60 KSI.  
 DESIGN LOADING: A.A.S.H.T.O. HS-20-44  
 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 130 (PSF). FLOTATION FORCES NOT ACCOUNTED FOR. INLET/OUTLET TEES AND DROP LEGS SUPPLIED AND INSTALLED BY G.C.  
**PIPING:**  
 INLET SECTION: 45,172.08 LBS.  
 MID-SECTION W/BAFFLE 42,547.94 LBS.  
 MID-SECTION W/O BAFFLE: 39,260.22 LBS.  
 OUTLET SECTION: 44,742.87 LBS.

**STANDARD NOTE:**  
 GALLONAGE DETERMINED BY NUMBER OF CHAMBERS. EACH CHAMBER'S HEIGHT, WIDTH AND DEPTH ARE DIMENSIONAL DUPLICATES. EACH UNIT CONTAINS ONE CAST CONCRETE BAFFLE LOCATED 1/4 TO 1/2 OF THE OVERALL LENGTH.  
**NOTE:**  
 ABOVE DETAILS DEPICT A 10000 GALLON CULVERT TANK. OTHER SIZES AVAILABLE. CHECK YOUR REQUIREMENTS FROM BELOW.

CHECK	ITEM	DWG. NUMBER	CHAMBERS	O.A.L.
✓	10000 GALLON CULVERT TANK	CTN10T	3	22'-10"
	13000 GALLON CULVERT TANK	CTN13T	4	30'-4"
	16000 GALLON CULVERT TANK	CTN16T	5	37'-10"
	20000 GALLON CULVERT TANK	CTN20T	6	45'-4"
	23000 GALLON CULVERT TANK	CTN23T	7	52'-10"
	26000 GALLON CULVERT TANK	CTN26T	8	60'-4"
	30000 GALLON CULVERT TANK	CTN30T	9	67'-8"
	33000 GALLON CULVERT TANK	CTN33T	10	75'-4"
	37000 GALLON CULVERT TANK	CTN37T	11	82'-10"
	40000 GALLON CULVERT TANK	CTN40T	12	90'-4"



**GENERAL NOTES:**  
 "A" - GASKET BY K.C.P.  
 "B" - WATERPLUG BY G.C.  
 "C" - TAR BY G.C.  
 "A", "B", & "C" AVAILABLE THROUGH KISTNER CONCRETE PURCHASED AND INSTALLED BY CONTRACTOR.  
**JOINT DETAILS FOR WATERTIGHT INSTALLATION:**  
**NOTE:** NON-POURABLE INSTALLATIONS ONLY.  
 ABOVE INFORMATION IS SUPPLIED FOR CONTRACTOR KNOWLEDGE. CONTRACTOR IS RESPONSIBLE FOR PROPER APPLICATION AND ULTIMATE WATERTIGHT INSTALLATION OF STRUCTURE.  
**PROCEDURE:**  
 1) INSTALL STRUCTURE BOTTOM SECTION.  
 2) LOCATE RUBBER PROFILE GASKET JOINT SEALANT "A" PER DETAIL.  
 3) INSTALL NEXT STRUCTURE SECTION.  
 4) WATERPLUG "B" INTERIOR & EXTERIOR, ALL GAPS.  
 5) APPLY TAR "C".

**PRODUCT DESIGNATION**  
 WATER TIGHT CULVERT TANKS  
 10,000 GAL. - 40,000 GAL./TRAFFIC  
 10-21-02 (PRODUCT-1)  
 DWG. NO. CT-WTCT ©

# **KON-STRUCTURE™ WATER TIGHT TANK STANDARD SPECIFICATION**

## **PART 1 – GENERAL**

### **1.1 DESCRIPTION**

#### **A. Work Included**

- 1. Furnish and deliver a complete factory built Kon-Structure™ Water Tight Tank and all appurtenances necessary to make a complete Komponent Kistner Concrete Products, Inc. system as detailed in these specifications and drawings.**
- 2. The Kon-Structure™ Water Tight Tank shall be manufactured by Komponent Kistner Concrete Products, Inc. and delivered to the job site. The Contractor shall provide the excavation, bedding and back fill for the tank and shall place the tank in the excavation.**
- 3. The Kon-Structure™ Water Tight Tank manufacturer shall provide factory-trained personnel to advise in the assembly of the tank sections in the field, while the Contractor is setting the sections in place.**
- 4. Scope of work to include: Precast reinforced concrete sections including joint gasket material and imbedded items and pipe sleeves where possible.**

### **1.2 GUARANTEE**

- #### **A. The Kon-Structure™ Water Tight Tank is guaranteed for one year from the date of installation that the structure would be free from defects in materials and workmanship.**
- 1. Watertightness is defined as loss of liquid level of less than 1/10 of 1% in any 24-hour period after absorption due to concrete porosity and permeability. Fire protection systems should utilize low liquid alarms and automatic pump recharge to insure supply, (ACI 350R).**

## **PART 2 – PRODUCTS**

### **2.1 PRECAST CONCRETE TANK STRUCTURE – DESIGN**

- #### **A. The Kon-Structure™ Water Tight Tank shall be constructed to the dimensions as shown on the contract drawings. Each section shall be designed to adequately and safely support all live and dead loads**

to which the structure will be subjected, typically HS-20, to withstand all conditions which may be encountered. Structural drawings and calculations shall be included with the submittal by the tank manufacturer. The sides and bottom of the tank sections to have voided waffle areas to make sections light weight. These waffled areas shall not effect the structural integrity of the section.

- B. Design calculations shall verify that the structures have been designed to withstand the burial and submergence due to the dead and live loads anticipated for the tank. The tank sections shall have adequate wall, floor and roof thickness and steel reinforcements sufficient for the depth of burial shown on the drawings.
- C. Design computations for uplift forces shall contain a minimum factor of safety of 1.15. When required for counter-floatation, as determined by the buoyancy calculations, the structures shall be designed to satisfactorily withstand uplift pressures exerted on the chambers. The manufacturer, to have as an option, a keyway with inserts for the Contractor to cast in place an antfloatation collar.
- D. All wall penetrations shall be formed utilizing resilient rubber pipe connectors by NPC or Press-Seal Gasket Corp.

## **2.2 PRECAST CONCRET TANK JOINT – DESIGN**

- A. Joint design shall consist of a shiplap type joint. The tank section joints will be formed by machined steel. The joint is designed to be flexible with a watertight lubeless gasket.
- B. All surfaces of the joint upon or against which the gasket may bear shall be smooth, free of spalls, cracks or fractures and imperfections that would adversely effect the performance of the joint.
- C. The joints of the tank shall be designed such that they will withstand the forces caused by the compression of the gasket when joined, without cracking or fracturing.
- D. Each precast section shall be provided with formed male and female joints to insure accurate joint surfaces and tolerance for a watertight seal. All joints between adjoining precast modules shall be primed at the factory and sealed by the Contractor under the supervision of the tank manufacturer's personnel when modules are set in the field utilizing a lubeless gasket. The gasket is one piece and no splices will be allowed.